JACKSONVILLE HARBOR, FLORIDA
DUVAL COUNTY
GENERAL REEVALUATION REPORT

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INTRODUCTION

1. The Jacksonville Port Authority working through the House Public Works and Transportation Committee requested the Corps study the feasibility of improving navigation in Jacksonville Harbor. The Port Authority believes that the existing navigation project could be improved for operational efficiency and safety of deep draft commercial vessels by providing a deeper channel with widening in certain areas. Such deepening and widening could reduce vessel operation costs on the existing project.

2. A reconnaissance study and report completed in April 1994, indicated sufficient justification for investigations to continue in more detail assessing project feasibility. Funding to initiate the study was received in August 1994. Additional funding enabled completion of the feasibility study. The Final Feasibility Report and Environmental Impact Statement, dated September 1998, was funded and initiated on August 5, 1994, submitted to South Atlantic Division September 25, 1998, and approved by HQUSACE with the signing of the Chief of Engineers on April 21, 1999. That report received authorization in the Water Resources Development Act (WRDA) of 1999 and included deepening the main channel from a project depth of 38 feet to 40 feet from the entrance channel to about river mile 14.7. A copy of the September 1998 EIS is available on our web site at http://www.saj.usace.army.mil/pd/envdocs/envdocsb.htm. and a copy of the July 1997 U.S. Fish and Wildlife Service Coordination Act Report (CAR) at http://www.saj.usace.army.mil/pd/envdocs/JaxHbr/car.html.

3. This General Reevaluation Report examines an extension of the WRDA 1999, authorized 40-foot project depth, from river mile 14.7 to mile 20. While that segment received consideration in the September 1998 feasibility study, sufficient benefits did not exist for deepening at that time. Since that time conditions have changed concerning petroleum bulk movements and container ship traffic in that segment as well as changes in ownership and expansion of petroleum and container ship terminals. A reevaluation of benefits based on new information provided the impetus for this study.

NEW PETROLEUM BULK MOVEMENTS

4. In July 1998, the District received a letter from ST Services requesting a reanalysis of transportation savings benefits due to changed conditions. ST Services owns and operates a marine petroleum product facility located in Segment 3A. In December 1995, it purchased the facility from Steuart Petroleum Company, which had purchased the adjacent Shell Oil facility in 1991. Since ST Services purchased the facility annual petroleum product receipts have increased from 5 million barrels to 20 million barrels, and deeper-drafting tankers are calling. The significant growth is due to ST Services expansion of business to achieve a more efficient use of the terminal's capacity, which was previously underutilized. The economic analysis in the feasibility report was based on information received from Steuart Petroleum Company. The analysis reflects cargo and vessel traffic data through 1993. This information resulted in minor tidal delay elimination benefits. Based on more recent data provided by ST

Services, the Districted determined that a reanalysis of transportation savings benefits was warranted. However, the District also determined that there was insufficient time to complete an appropriate reevaluation of navigation improvements in Segment 3A in time for incorporation of any improvements into the WRDA 1999. Accordingly, the District decided that it would pursue a post authorization change if the reanalysis determined that navigation improvements were economically justified.

NEW CONTAINER SHIP OPERATIONS

5. A December 12, 2000, letter from the Jacksonville Port Authority (JPA) requested further evaluation of the main channel to include the JPA Talleyrand Terminals. One of JPA's existing container ship operators grew and developed a partnership with other lines to expand into the South American market. The leading partner in that consortium is currently a tenant at JPA's newly renovated Talleyrand Terminal. The Talleyrand Terminal provides a significant rail advantage for that group's expanded service. The new container ship and petroleum tanker movements provided the impetus for this reevaluation.

STUDY AUTHORITY

6. A reevaluation request in the Water Resources Development Act of 1999, 106th Congress, U.S. House of Representatives Report 106-298, Conference Report, dated August 5, 1999, Section 101(a) (17) provides the study authority as follows:

> "The conferees understand the Report of the Chief of Engineers for the navigation project at Jacksonville Harbor, Florida, recognizes that a re-evaluation of the project based on a potential change in the commercial navigation fleet could result in redesignation of the locally referred plan as the National Economic Development Plan. Furthermore, if the locally preferred plan is redesignated as the National Economic Development Plan, cost sharing for the recommended plan shall be in accordance with section 101of the Water Development Act of 1986."

7. Authorization of the Final Feasibility Report and Environmental Impact Statement authorization in the Water Resources Development Act (WRDA) of 1999 and receipt of Preconstruction Engineering and Design (PED) funds enabled the continuation of the study process to determine the feasibility of extending the 40-foot project depth from mile 14.7 to mile 20.

STUDY PURPOSE AND SCOPE

8. The study involved an evaluation of problems associated with navigation on the existing Jacksonville Harbor project. Specifically, the study reviewed the needs of the Port Authority, commercial shippers, pilots, and concerns of the United States Coast Guard (USCG) and Navy (USN). Overall environmental, social, and economic

concerns were evaluated in the study area and identified to the extent possible within the limits of available technology and study funding restrictions.

9. Alternative solutions for correcting problems and providing deeper and wider channels for safer transit of large commercial vessels with more cargo tonnage onboard were identified for evaluation of costs, benefits, and environmental impacts associated with implementation. Base data for that evaluation came from existing survey and maintenance work records on the harbor project as well as information from the sponsor, commercial shippers, USCG, USN, Federal and State agencies. The Final Feasibility Report and Environmental Impact Statement dated September 1998 provided reference information for core borings, hydrographic surveys, disposal area surveys, and tidal data and velocity profile data in support of hydrodynamic and ship simulation modeling work.

10. Economic investigations provided tangible navigation benefits. An environmental assessment reviewed U.S. Fish and Wildlife Service Coordination, National Marine Fisheries Service coordination, and cultural resource investigations. The study resulted in the formulation of a plan that appears to safely, effectively, and economically resolve the commercial navigation problems with a minimum impact on the environment.

PRIOR STUDIES AND REPORTS

11. Federal interest in navigation on the St. Johns River started as early as 1869. Interest in improving the St. Johns River from Jacksonville to the Atlantic Ocean for deep draft commercial vessels has been a continued effort since that time. Table 1 contains the prior studies and reports over the years on that reach of the river which is today the deep draft portion of the Jacksonville Harbor project.

Table 1
Prior Studies and Reports
Jacksonville Harbor

		CHIEF OF ENGINEERS	PUBLISHED DOCUMENTS				
TYPE	REPORT	RECOMMEN-	CONGRESSIONAL DOCUMENTS				
STUDY[1]	DATE	DATIONS	TYPE[2]	NO.	CONGRESS	SESSION	OTHR
S	01/29/1869	---					3
S	06/30/1872	---					4
S	03/25/1879	Favorable					5
S	02/18/1895	Favorable	H.Ex	346	53	3	6
PE	04/30/1909	Favorable					
S	11/22/1909	Favorable	H	611	61	2	
PE	04/29/1922	Favorable					
S	03/04/1926	Favorable	H	483	70	2	
S	06/03/1935	---					
S	11/19/1940	Favorable	H	322	77	1	
S	05/23/1944	Favorable	S	230	78	2	
S	08/09/1945	Favorable	S	179	79	2	
PE	12/26/1950	Unfavorable					
S	05/19/1965	Favorable	H	214	89	1	
S	05/15/1981	Favorable	H	233	98	2	
R	06/29/1994	Favorable					
FR	04/21/1999	Favorable	S	507	106		7

1 Abbreviations are: PE = Preliminary Evaluations R = Reconnaissance Report
FR = Feasibility Report S = Surveys

2 Symbols are: H = U.S. House of Representatives Document S = U.S. Senate Document

3 Annual Report of the Chief of Engineers, 1869, page 266.

4 Annual Report of the Chief of Engineers, 1872, page 672.

5 Annual Report of the Chief of Engineers, 1879, page 767.

6 Annual Report of the Chief of Engineers, 1895, page 1586.

7 Public Law 106-53, Aug. 17, 1999, 106th Congress, "Water Resources Development Act of 1999", Sec.101(a)(17)

12. Two other studies, not included in table 1, involved the consideration of navigation improvements in the vicinity of Blount Island. Both of those studies were under the authority of Section 107 of the 1960 River and Harbor Act, as amended. The reconnaissance study and report, dated December 1985, considered the Federal

interest of widening the turn at the junction of the main ship channel in Jacksonville and the Blount Island west channel. The study results showed economic justification for the widener. Just prior to the report, Section 102 of Public Law 99-141, dated November 1, 1985, provided the authorization for widening of the turn in Jacksonville with the use of available operation and maintenance funds. Based on language in the Act, no further study was needed for authorization of the work. A second reconnaissance study and report, dated August 1989, considered the deepening of the channel on the west side of Blount Island. The study was favorable but the Jacksonville Port Authority deferred further study pending the availability of funds. Since that time the WRDA 1999 authorization included deepening that channel from 30 feet to 38 feet based on the 04/21/1999 feasibility study listed in Table 1 above.

MILL COVE AND CHICOPIT BAY

13. Two related study areas adjacent to the Jacksonville Harbor Federal navigation project include Mill Cove and Chicopit Bay shown in figure 1. Both areas have experienced shoaling problems as a result of the Federal navigation project. A May 1981 study of Mill Cove recommended two diversion features connected by a channel 6 feet deep by 80 feet wide to improve flow and circulation through the area. As directed by the Board of Engineers for Rivers and Harbors (BERH), a former review agency within the Corps of Engineers, only the flow diversion features were constructed. BERH recommended monitoring of the impact of the diversion features on the cove area before undertaking the 6 by 80-foot channel.

14. Following that recommendation, section 317 of the Water Resources Development Act of 1996 (WRDA 96) modifies the project for navigation, Jacksonville Harbor (Mill Cove), Florida, to direct the Secretary to carry out a project for mitigation, consisting of measures for flow and circulation improvement within Mill Cove, at an estimated total Federal cost of $2,000,000.[1] No work may be undertaken until funds are appropriated for that purpose.[2] Fiscal year 2000 appropriations have allowed for initiation of plans and specifications for the flow and circulation improvement channel. Contract award and construction of the flow improvement channel occurred in fiscal year 2002.

15. The Chicopit Bay 1135 Environmental Restoration Study currently in progress, but not approved yet for implementation, will address degradation of the ecosystem in that area. The degradation includes loss of shallow bay bottom habitat due to shoaling; changes in flow and circulation in Chicopit Bay and the adjoining creeks due to growth of the shoal; and loss of feeding ground for dolphins and manatees in Mt. Pleasant and Greenfield Creeks due to insufficient water depths. In addition, the loss of Great Marsh Island as a barrier island has resulted in loss of protection for the nearby bay, marsh and hammocks from erosion due to storms, particularly northeasters which occur in the area in the winter. A restored ecosystem might consist of a functioning barrier island with protected bay, marsh and hammocks, improved circulation, shallower or pre-

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[1] Public Law 104-303, October 12, 1996. Section 317. Jacksonville Harbor (Mill Cove), Florida.

[2] CECW-PE MEMORANDUM FOR Commander, South Atlantic Division, ATTN: CESAD-ET-PL. SUBJECT: Implementation of Section 317 of Water Resources Development Act of 1996 (WRDA 96) - Jacksonville Harbor (Mill Cove), Florida.

breakthrough depths in the shoal area of the bay, or water depths in the adjacent creeks that allow access to feeding grounds for dolphins and manatees.

MILE POINT EROSION STUDY

16. The Mile Point Erosion Study (905(b) Analysis) initiated in November 1999 will provide a preliminary investigation of shoreline erosion problems along the north shoreline of the St. Johns River near Mile Point. Residents living along Heckscher Driver in the Mile Point area believe the loss of shoreline property is related to past dredging activities near the Intracoastal Waterway and the St. Johns River. Pending further review and subsequent approval during fiscal year 2002 the ***Section 905(b) Analysis for the Mile Point Shoreline*** will allow for a feasibility phase study. The feasibility study will provide hydrodynamic modeling and ship simulation testing of potential structural alternatives to reduce or relocate the troublesome ebb flow currents at the intersection of the Intracoastal Waterway and the St. Johns River.

17. As an interim measure, adjacent to the Mile Point area where catastrophic shoreline failures have occurred, placement of some of the rock material from the WRDA 1999 authorized future deepening project of the main channel has recently received consideration. A Public Notice dated October 17, 2001, requested comments concerning consideration of that area as an interim alternative disposal site for material from the planned deepening of about 14.7 miles of the main channel for Jacksonville Harbor. As of December 2001 comments have been favorable with adjacent landowners expressing strong support.

WATER PROJECTS

18. Besides the Jacksonville Harbor Federal navigation project, there are several other Federal water projects that have an association with the St. Johns River. The United States Navy has a Federal navigation project at the mouth of the St. Johns River. About 5 miles inland along the river from the coastal shoreline is where the Atlantic Intracoastal Waterway crosses the St. Johns River. The Duval County Shore Protection Project extends from the St. Johns River to the Duval County boundary line with St. Johns County. From Jacksonville to Lake Harney is a small boat channel that connects with the Jacksonville Harbor project.

JACKSONVILLE HARBOR

19. The Jacksonville Harbor Federal navigation project is a deep draft ship channel that serves large commercial bulk and container traffic as well as some U.S. Navy vessels. As noted in the discussions on prior studies and reports, the history of Jacksonville Harbor goes back to the late 1800's as navigation improvements on the St. Johns River started. One of the first navigation problems encounter by early mariners involved getting across the sandbar at the mouth of the St. Johns River. Jean Ribaults's log of his discovery of the St. Johns River in the vicinity of Jacksonville about 1562 reads:

"The night now approaching, we returned to our ships, for we durst not hazard our ship because of the bar of sand that was at the mouth of the river; notwithstanding, at full tide there were at least two fathoms and a half of water, and it was but a leap over a surge to pass this bar, not exceeding two cables (1,200 feet) in length, and then afterwards there were six or seven fathoms of water everywhere ... a ship of four to six hundred tons may enter therein at all tides, yea, of afar greater burden if there are pilots."

20. River and Harbor Act of October 27, 1965. The River and Harbor Act of October 27, 1965, provided for depths of 38 feet in the main ship channel to mile 20 over bottom widths that varied from 400 to 1200 feet. The extra bottom width over 400 feet was in the bends and turns of the river. Completion of that work to provide a depth of 38 feet was in 1978. From mile 20 to Commodore Point, the channel has a depth of 34 feet. The channel has a depth of 30 feet from Commodore Point to the terminus of the project at the Florida East Coast (FEC) railroad bridge. The Arlington Cut channel and old river channel around the north side of Blount Island from Fulton Cut to Dame Point is 30 feet over a bottom width of 400 feet. The 38-foot Jacksonville Harbor project described above is shown on figure 1.

21. WRDA 1999. The most recent deepening authorization occurred in the Water Resources Development Act (WRDA) of 1999 based on the Report of the Chief of Engineers dated April 21, 1999 (figure 1). That authorization consists of deepening a 3-mile-long segment of the West Blount Island (WBI) Channel, modifying 14.7 miles of the main channel in the St. Johns River and constructing five advance maintenance zones or sediment traps. The West Blount Island Channel project depth increases from an existing depth of 30 feet to 38 feet below mean low water from its intersection with the main channel in the St. Johns River to the Jacksonville Port Authority petroleum terminal. The WBI channel width of 300 feet remains the same. Modification of the main channel from the entrance to river mile 14.7 includes realigning a short channel segment, reducing the existing channel bottom widths, and deepening. The realignment occurs along cuts 39 through 41 between miles 7 and 8.3. From the main entrance channel in the Atlantic Ocean to mile 14.7 a reduction in channel bottom widths results in new bottom widths varying from 375 feet to 950 feet, or reductions of 25 to 350 feet from the existing bottom widths which currently vary from 400 to 1200 feet. The project depth of the main channel from the entrance to river mile 14.7 increases from 38 feet to 40 feet.

ST. JOHNS RIVER - JACKSONVILLE TO LAKE HARNEY

22. The initial navigation project authorization was in the Rivers and Harbors Act of March 1899 for a channel 13 feet deep over a bottom width of 200 feet deep from the Jacksonville FEC railroad bridge to Palatka. The River and Harbors Act of June 25, 1910, authorized a channel depth of 8 feet over a bottom width of 100 feet from Palatka to Sanford where the channel depth reduced to 5 feet and extended to Lake Harney. Further improvements provided the current depths of 12 feet from Palatka to Sanford and 10 feet from Sanford to Lake Harney over the same bottom width (100 feet). Figure 2 shows the project that exists between Jacksonville and Lake Harney. Commercial traffic on that waterway consists primarily of tugs moving barges with fuel for the power plants along the river.

U.S. NAVY CHANNEL

23. The United States Navy has a channel at the mouth of the St. Johns River to provide access for naval ships between the Mayport Navy Basin and the Atlantic Ocean. The basin and channel have a depth of 42 feet. From the ocean to the junction of the side channel into the Navy Basin, maintenance of the ship channel is part of Federal Civil Works program. From the junction with the main Jacksonville Harbor ship channel, the United States Navy has the responsibility to maintain the side channel into and including the Navy basin at Mayport.

DUVAL COUNTY SHORE PROTECTION

24. Authorization of the Duval County Shore Protection Project was in 1965. The project provided for a protective and recreational beach with nourishment for the first 10 years along 53,000 feet of shore from the St. Johns River to the Duval-St. Johns County line (shown on figure 3). Section 934 of the 1986 Water Resources Act (Public Law 99-662) allows the Secretary of the Army, acting through Chief of Engineers, to extend periodic beach nourishment at authorized shore protection projects for a period of 50 years. A Section 934 study found that future periodic nourishment is feasible for the project and the findings are in an October 1990 reevaluation report.

25. Suitable sand material from the Jacksonville Harbor navigation project goes primarily in the Mayport Naval Station shoreline reach of the Duval County Shore Protection Project. That material comes mainly from maintenance of the entrance channel and inner channel reach near Mayport. The Mayport Naval Station shoreline is the most northern area of the shore protection project. Sand placed in that area provides protection to upland development and a source of supply for continued nourishment of the shore to the south.

26. About 603,000 cubic yards of maintenance dredging material from the Jacksonville Harbor Entrance Channel was placed on Huguenot Park and along the Navy property south of the St. Johns entrance in 1999. The next renourishment contract for the project is currently scheduled for award in FY 2002. Approximately 1.0 million cubic yards of sand is anticipated to be required from a least cost disposal site for this renourishment.[3]

LITTLE TALBOT ISLAND

27. The feasibility report for the shore protection study for Little Talbot Island in Duval County was completed in November 1998. Construction of a revetment to the south shoreline of Little Talbot Island, Highway A1A and the bridge crossing over Fort George Inlet was recommended in the report. The Florida Department of Transportation is the non-Federal sponsor. The Water Resources Development Act of 1999, Section

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[3] Colonel Joe R. Miller, District Engineer, Jacksonville District, Presentation to the 43rd Annual Meeting of the Florida Shore and Beach Preservation Association, September 2, 1999, Ft. Lauderdale, FL.

101(b), authorized this project, subject to completion of the Chief of Engineers Report by December 31, 1999.[4]

INTRACOASTAL WATERWAY PROJECT

28. The Intracoastal Waterway Project is primarily a small boat channel that extends from Trenton, New Jersey to Miami, Florida along the east coast of the United States. That waterway crosses the St. Johns River at about mile 5 on the Jacksonville Harbor Federal navigation project on figure 1. At that crossing, the waterway on each side of the river has a bottom width of 125 feet at a depth of 12 feet.